## REMARKS/ARGUMENTS

Claims 1-3 and 6-15 remain pending. Claim 1 has been amended to recite that the claimed optical connector comprises:

> *a three-dimensional optically-transmissive bulk dielectric for abutment with an input connection face of the input optical component and an output connection face of the output optical component, the three-dimensional bulk dielectric having a bulk refractive index; and*
>
> *a connection path optically written within the three-dimensional bulk dielectric for connecting the input connection face to the output connection face, the connection path being defined substantially throughout its length by a modified refractive index different from the bulk refractive index.*

Support for the amendment can be found in the application as originally filed, at least at paragraphs 11, 13, 19, 22 and 24. Additional support can be found at Fig. 5 where the length of a connection path (waveguide 66) is shown. Claims 4 and 5 have been cancelled without prejudice. Claim 6 has been amended to reflect the cancellation of claim 4.

**Claim Rejections Under 35 U.S.C. §103(a)**

The Examiner rejected claims 1-15 as being obvious in view of U.S. Patent Application Publication No. 2004/0126055 A1 to Flory et al. (Flory) and of U.S. Patent Application No. 2003/0223720 A1 to Li et al. (Li). Applicant respectfully disagrees for at least the following reasons.

Flory discloses a photonic crystal interferometric switch (30). The switch (30) comprises a two-dimensional photonic crystal slab (31), a series of dielectric posts (39) disposed in air (see, e.g., paras. [0013] and [0030]), an input portion (32), output portions (33, 34) and an interference channel (35). The input and output portions, and the interference channel, are defined by the absence of posts (39). As mentioned by the Examiner in the Office Action of January 26, 2007, Flory does not state that defect sites that make up the optical connection path are optically written within the bulk dielectric.

Li discloses a photonic crystal (105) comprising a plurality of holes with the perimeter of some holes (Fig. 2A) having their refractive index modified by being subjected to laser energy. The laser modification of holes leads to a change in the transmission characteristics of the photonic crystal (Fig. 3). The laser modification of Li's photonic crystal does not define any type of connection path,

rather, it modifies the optical transmission characteristics of the photonic crystal (see, e.g., paragraph [0046]).

By contrast, the connection path defined by currently amended claim 1 comprises *a connection path optically written within the three-dimensional bulk dielectric, the connection path being defined substantially throughout its length by a modified refractive index different from the bulk refractive index, the connection path for connecting the input connection face to the output connection face.*

The definition of *throughout* is, according to Webster's Third New International Dictionary, *all the way from one end to the other of : in or to every part of : everywhere.* Accordingly, the optically written connection path of currently amended claim 1 has, along its entire length, a modified refractive index.

In his rejection of the claims, at item 9 of the Office Action, the Examiner states that the posts in Flory's photonic crystal could be modified by the laser technique of Li. Applicant submits that this approach would fail to produce an optically written connection path defined throughout its length by a modified refractive index. Furthermore, a connection path according to Li and Flory would not be optically written in the sense that the term is used in claim 1, i.e., to denote a substantially continuous change in a bulk index of refraction. Any optically written connection path in Flory's photonic crystal would have a modified refractive index only on posts making up the crystal, not along its entire length, since empty space between the posts would not have a modified refractive index.

Further, since Li teaches modifying the optical transmission characteristics of a photonic crystal (105) by subjecting the perimeter of holes (e.g., 132 in Fig. 2A) to laser energy, the photonic crystal of Li is modified at one or more discrete points along its length, not throughout its length. Therefore, as in the case of Flory, Li fails to teach or suggest an optically written connection path defined along its entire length by a modified refractive index.

Since neither Flory nor Li teach or suggest, either alone or in combination, all the limitations or currently amended claim 1, claim 1 cannot be obvious in view Flory and Li. Therefore, withdrawal of the rejection of independent claim 1, and of its dependent claims 2, 3 and 6-15, under 35 U.S.C. §103(a) is respectfully requested.

The Commissioner is hereby authorized to debit $120.00 from Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP, representing the fees for a one month extension of time.

The Commissioner is hereby authorized to charge any additional fees, and credit any over payments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

It is submitted that this application is now in condition for allowance, and action to that end is respectfully requested.

Respectfully submitted,

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